AMENDMENT UNDER 37 C.F.R. 1.111

Application No.: 09/747,933

Attorney Docket No.: Q62491

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

## LISTING OF CLAIMS:

Claims 1-4 (canceled).

Claim 5 (currently amended): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of electrodes, wherein at least one layer comprises a light-emitting material having a partial structure represented by the following formula (4) to (7) and (9), (21), (22) or a tautomer thereof:

wherein R<sup>1</sup> and R<sup>2</sup> each represent a substituent; and q<sup>1</sup> and q<sup>2</sup> each represent an integer of from 0 to 4, with the proviso that the sum of q<sup>1</sup> and q<sup>2</sup> is 1 or more,

$$Z^{1} \stackrel{C}{\downarrow} \qquad \qquad C$$

$$Ln \stackrel{N=-}{\downarrow} \qquad \qquad (4)$$

$$Z^{12}$$

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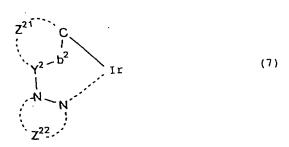
wherein Z<sup>11</sup> and Z<sup>12</sup> each represent a nonmetallic atom group required to form a 5- or 6-membered ring with at least one of carbon atom and nitrogen atom, said ring optionally having a substituent or forming a condensed ring with the other another ring; Ln<sup>1</sup> represents a divalent group; Y<sup>1</sup> represents a nitrogen atom or carbon atom; and b<sup>1</sup> represents a single bond or double bond,

$$(CO)$$
Ir  $(5)$ 

wherein CO represents a carbonyl group and the carbon atom directly bonds to Ir,

$$(NC)Ir$$
 (6)

wherein CN represents a cyano group and the carbon atom directly bonds to Ir,



wherein  $Z^{21}$  and  $Z^{22}$  each represent a nonmetallic atom group required to form a 5- or 6-membered ring with at least one of carbon atom and nitrogen atom, said ring optionally having a substituent or forming a condensed ring with the other another ring;  $Y^2$  represents a nitrogen atom or carbon atom; and  $b^2$  represents a single bond or double bond,  $Z^{22}$  represents a

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nonmetallic atom group required to form an imidazole ring, thiazole ring, oxazole ring, pyrrole ring, a 1,2,3-triazole ring, a 1,2,4 triazole ring, pyridine ring or pyrimidine ring or a pyridazine ring,

wherein  $X^{201}$ ,  $X^{202}$ ,  $X^{20}$  and  $X^{204}$  each represent a nitrogen atom or C-R and forms a nitrogen-containing heteroaryl 6-membered ring with C=N-, with the proviso that at least one of  $X^{201}$ ,  $X^{202}$ ,  $X^{203}$  and  $X^{204}$  represents a nitrogen atom; R represents a hydrogen atom or substituent; and  $Z^{201}$  represents an atomic group for forming an aryl or heteroaryl ring,

wherein  $Z^{201}$  and  $Z^{301}$  each represent an atomic group for forming an aryl or heteroaryl ring,

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$$Z^{201}$$
 $I_{r}$ 
 $L_{r}$ 
 $L^{203}$ 
 $L_{r}$ 
 $L^{203}$ 
 $L_{r}$ 
 $L^{203}$ 
 $L_{r}$ 
 $L^{203}$ 
 $L_{r}$ 
 $L^{203}$ 

wherein Z<sup>201</sup> and Z<sup>401</sup> each represent an atomic group for forming an aryl or heteroaryl ring, L<sup>203</sup> is a <u>nitrogen-containing heterocyclic</u> ligand <del>required to form an orthometalated iridium complex</del> to coordinate Ir metal as bidentate ligand, m203 represents an integer of from 1 to 3 and n203 represents an integer of from 0 to 2, <u>and m203 and n202 represent the number of ligands required to satisfy a coordination number 6 or iridium,</u>

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wherein Z<sup>1</sup> represents an atomic group which forms a heteroaryl ring.

Claim 6 (previously presented): An organic light-emitting device according to claim 5, wherein at least one layer consists essentially of the light-emitting material.

Claim 7 (original): The light-emitting device according to Claim 5, wherein said layer comprising the light-emitting material is formed by a coating process.

Claims 8-9 (canceled).

Claim 10 (currently amended): The organic light-emitting device according to claim 5, wherein  $\mathbb{Z}^{22}$   $\mathbb{Z}^{21}$  of formula (7) represents a nonmetallic atom group required to form an imidazole ring, thiazole ring, pyrrole ring, pyridine ring or pyrimidine ring.

Claim 11 (previously presented): The organic light-emitting device according to claim 5, wherein m203 is 3 and n203 is 0.

Claim 12 (previously presented): The organic light-emitting device according to claim 5, wherein m203 is 2 and n203 is 1.

Claim 13 (previously presented): The organic light-emitting device according to claim 5, wherein m203 is 1 and n203 is 2.

Claim 14 (currently amended): The organic light-emitting device according to claim 5, wherein  $L^{202}$   $L^{203}$  of formula (20) is a N,C-orthometalating ligand.

Claim 15 (currently amended): The An organic light-emitting device according to claim 5, wherein formula (9) is comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of

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electrodes, wherein at least one layer comprises a light-emitting material having a partial structure represented by formula (19) or a tautomer thereof:

$$Z^{201}$$
 $Ir - (L^{202})_{n202}$ 
 $Ir - (L^{202})_{n202}$ 
 $Ir - (L^{202})_{n202}$ 

wherein Z<sup>201</sup> and Z<sup>301</sup> each represent an atomic group for forming an aryl or heteroaryl ring, L<sup>202</sup> is a ligand required to form an orthometalated iridium complex, nitrogen-containing heterocyclic ligand or diketone ligand, n202 represents an integer of from 0 to 4 and m202 represents an integer of from 1 to 3, and n202 and m202 represent the number of ligands required to satisfy a 6 coordination number of iridium.

Claim 16 (previously presented): The organic light-emitting device according to claim 15, wherein  $L^{202}$  is a ligand required to form an orthometalated iridium complex.

Claim 17 (previously presented): The organic light-emitting device according to claim 15, wherein m202 is 3 and n202 is 0.

Claim 18 (new): The organic light-emitting device according to claim 5, wherein the partial structure is represented by formula (4).

Claim 19 (new): The organic light-emitting device according to claim 5, wherein the partial structure is represented by formula (7).

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Claim 20 (new): The organic light-emitting device according to claim 5, wherein the partial structure is represented by formula (9), wherein  $Z^{201}$  represents an atomic group for forming a heteroaryl ring.

Claim 21 (new): The organic light-emitting device according to claim 5, wherein the partial structure is represented by formula (22).

Claim 22 (new): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of electrodes, wherein at least one layer comprises a light-emitting material having a partial structure represented by the following formula (20) or a tautomer thereof:

$$Z^{201}$$
 $I_{r}$ 
 $L^{203}$ 
 $I_{r}$ 
 $L^{203}$ 
 $I_{r}$ 
 $L^{203}$ 
 $I_{r}$ 
 $L^{203}$ 
 $I_{r}$ 
 $L^{203}$ 
 $I_{r}$ 
 $L^{203}$ 

wherein Z<sup>201</sup> represents an atomic group for forming a heteroaryl ring and Z<sup>401</sup> represents an atomic group for forming an aryl or heteroaryl ring, L<sup>203</sup> is a ligand required to form an orthometalated iridium complex to coordinate Ir metal as bidentate ligand, m<sup>203</sup> represents an integer of from 1 to 3 and n203 represents an integer of from 0 to 2, and m203 and n203 represent the number of number of ligands required to satisfy a coordination number 6 of iridium.

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Claim 23 (new): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of electrodes, wherein at least one layer comprises a light-emitting material having a partial structure represented by the following formula or a tautomer thereof:

Claim 24 (new): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of electrodes, wherein at least one layer comprises a light-emitting material having a partial structure represented by the following formula (8) or a tautomer thereof:

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$$Z^{201}$$

Ir

 $X^{204}$ 
 $X^{203}$ 
 $X^{201}$ 
 $X^{203}$ 
 $X^{202}$ 
 $X^{202}$ 

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wherein  $X^{201}$ ,  $X^{202}$ ,  $X^{20}$  and  $X^{204}$  each represent a nitrogen atom or C-R and forms a nitrogen-containing heteroaryl 6-membered ring with -C=N-, with the proviso that at least one of  $X^{201}$ ,  $X^{202}$ ,  $X^{203}$  and  $X^{204}$  represents a nitrogen atom; R represents a hydrogen atom or substituent; and  $Z^{201}$  represents an atomic group for forming an aryl or heteroaryl ring.

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Claim 25 (new): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting material having a partial structure represented by the following formula (9) or a tautomer thereof:

wherein  $Z^{201}$  and  $Z^{301}$  each represent an atomic group for forming an aryl or heteroaryl ring.

Claim 26 (new): An organic light-emitting device comprising a light-emitting layer or a plurality of thin organic compound layers containing a light-emitting layer formed interposed between a pair of electrodes, wherein a least one layer comprises a light-emitting material having a partial structure represented by the following formula or a tautomer thereof:

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$$z^{201}$$
 $L_{r}$ 
 $L_$ 

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wherein  $Z^{201}$  and  $Z^{401}$  each represents an atomic group for forming an aryl or heteroaryl ring,  $L^{203}$  is a nitrogen-containing heteroaryl ligand to coordinate Ir metal as bidentate ligand, m203 represents an integer of from 1 to 3 and n203 represents an integer of from 0 to 2, and m203 and n202 represent the number of ligands required to satisfy a coordinating number 6 or iridium.